



SAN ANTONIO CAMPUS - MATH AND SCIENCES
Syllabus for CSCI 3361 – Concepts of Programming Languages

1. Mission Statement: Wayland Baptist University exists to educate students in an academically challenging, learning-focused and distinctively Christian environment for professional success and service to God and humankind.

2. Course: **CSCI 3361** – 01, Concepts of Programming Languages

Winter 2017 Syllabus
Provided as Example

3. Term: Winter 2017

4. Instructor: Dr. Paul Parker, Asst. Professor of Computer Science

5. Office Phone and Email Address: 210.826.7595 Ext 291, **paul.parker@wbu.edu (best way to contact me)**. You may **call and text me at 210-460-0499**, via Google Voice; calls and texts will be forwarded from Google Voice from 10 am to 5 pm weekdays and 10 am to 3 pm on Saturdays, and otherwise will be silently dropped.

6. Office Hours and Location: **MW 4:00-5:45, Thurs 2:15-5:45**, Callaghan Tower. Other hours available by appointment, and can include screensharing/Skype/FaceTime/Zoom/etc. Note also the phone number for text messaging above.

7. Class Meeting: VC with tutorials some Tuesdays 5:10 pm per schedule below.

8. Catalog Description: Concepts of programming languages. Theory and practice, including survey of distinctively-varied programming languages, and investigation and comparison of different programming language paradigms. Basics of language implementation and parsing. Prerequisite(s): CSCI 2313

10. Required Textbook and Resources:

Required textbook:

1. The C Programming Language, Kernighan and Ritchie, Prentice Hall, 1988. ISBN: 978-0131103627

Recommended textbook:

1. The Little Schemer, MIT Press, 1995, Friedman and Felleisen. ISBN: 860-1300171425 (this text is recommended for students who really want to learn how to think functionally)

Other resources: (See also https://www.evernote.com/l/ACyERIHfu8xCi5_WBt0kaadRzaD8jM2-tOQ for some more C options; put on syllabus or in Blackboard C weeks)

CSO6: P.260-269, 288-295 of Chapter 6 from Computer Science: An Overview, Brookshears and Brylow, 12th

TP - Think Python PDF - Blackboard OR <http://www.greenteapress.com/thinkpython/thinkpython.pdf>

Sponsky - Joel on Software: "Can Your Programming Language Do This?"

<http://www.joelonsoftware.com/items/2006/08/01.html>

"Quick" Tutorial on Racket Scheme - <http://docs.racket-lang.org/quick/>

RG - Racket Guide - <http://docs.racket-lang.org/guide/index.html>

HTDP2e Prologue - http://www.ccs.neu.edu/home/matthias/HtDP2e/part_prologue.html

You must have access to a laptop on which you can install Python, the Racket flavor of Scheme, and a standards-compliant C environment. Python and Racket can be downloaded from <http://python.org> and <http://racket-lang.org>.

Code::Blocks is a good quality standard C implementation. You can download it from <http://codeblock.org> (select the default one, which bundles mingw). You may use a different ANSI C or C99 environment if you wish, such as Quincy which is much simpler: <http://quincy.org>. If you use an environment such as Code::Blocks that offers code completion, be careful that when you are learning the language you type out the program and don't allow the environment to autocomplete keywords and function calls, because you want to absorb the syntax for the quizzes and test. I do not recommend Visual Studio for this

class, as it is not an ANSI-compliant C environment--it is for writing “Visual C/C++” for Microsoft platforms, and anyone who uses it will still have to test their code in a standard implementation (you can find info online about configuring it for ANSI C99).

11. Optional Materials: n/a, but you need to bring your laptop to every class.

12. Course Outcome Competencies:

Upon completion of this course the student should be able to:

- Explain basics of parsing
- Write simple programs in C
- Write simple programs in Racket Scheme
- Write simple programs in Python
- Discuss some factors that might make one language more suitable than another for a given project

13. Attendance Requirements: All students are expected to attend all class sessions and are responsible for knowing the material covered. Any student missing more than 25% of the class will fail the class.

14. Course Requirements and Grading Criteria:

Exams - 25% of grade total. Multiple-choice and open-ended questions for mid-term and comprehensive final. You may be expected to write code on the exams.

Weekly Quizzes - 15% of grade. Each week of class will begin with a quiz to measure student comprehension of material and encourage you to absorb your reading and weekly videos. The lowest 2 grades will be dropped; this is the provision for days you are sick or miss the quiz or whatever. There is no makeup for missed quizzes and reference materials are not allowed.

Labs – 40 % of grade. Submit via Blackboard each week by Saturday night, per schedule. **10% reduction per day for late**, not accepted after Wednesday night, so you don’t fall behind on the next week’s material. For the labs, you may refer to your book and discuss difficulties with your classmates but may not use code from anyone nor from the Internet.

Content Creation - 20% of grade. The details and rubric for these will be found on Blackboard. This is your opportunity to create material that other students can learn from.

Grading Criteria: A standard grading scale shall be used in the course: A = 90-100%, B=80-89%, C=70-79%, D=60-69%, F= <60. There is no guarantee of any rounding.

15. Tentative Schedule:

COURSE OUTLINE/CALENDAR

| Week | Material | Tues Tutorial? | Lab due Sat? | Quiz due Sat PM? |
|------------------|---------------------------------------|--|-----------------------|---------------------------|
| 0 | Pework: Read CSO6 selection | | | |
| 1: 11/11-11/18 | K&R: 1-3, due date delayed late post | | Yes: 11/25: C1 | Yes: 11/25: Ch 1-3 |
| VAC: 11/18-11/25 | | <i>Thanksgiving Break</i> | | |
| 2: 11/25-12/02 | K&R: 4-5 | | Yes: 12/02: C2 | Yes: 12/02: 4-5 |
| 3: 12/02-12/09 | K&R: 6-7 | Yes: 12/05: C wrapup, esp pointers. Parsing. | Yes: 12/09: C3 | Yes: 12/09: 6-7 |
| 4: 12/09-12/16 | TP: 1-5 | | Yes: 12/16: P1 | Yes: 12/16: 1-5 |
| VAC: 12/16-12/23 | | <i>Christmas Break</i> | | |
| VAC: 12/23-12/30 | | <i>Christmas Break</i> | | |
| 5: 12/30-1/06 | TP: 6-10 | | Yes: 1/06: P2 | Yes: 1/06: 6-10 |
| 6: 1/06-1/13 | TP: 11-17 | Yes: 1/09: Python wrapup, Rv | Yes: 1/13: P3 | Yes: 1/13: 11-17 |
| 7: 1/13-1/20 | | Midterm | | |
| 8: 1/20-1/27 | Sponsky, RG: 1,2-2.2.5 | Yes: 1/23: Scheme intro ("Quick") | Yes: 1/27: R1 | Yes: 1/27: -2.2.5 |
| 9: 1/27-2/03 | HTDP2e Prologue except Not!, RG - 2.3 | | Yes: 2/03: R2 | |
| 10: 2/03-2/10 | RG 2.2.7 and 2.3 (both reprise), 2.4 | Yes: 2/06: Wrapup, esp 2.2.7 and 2.3 | | Yes: 2/10: -2 |
| 11: 2/10-2/17 | | Proctored Final | | |

Books and Resources

- (Parsing) CSO6: P260-269,288-295 of Chapter 6 from Computer Science: An Overview, Brookshears and Brylon
- (C) K&R - C Programming Language (textbook) by Kernighan and Ritchie
- (Python) TP - Think Python PDF - Blackboard OR <http://www.greenteapress.com/thinkpython/thinkpython.pdf>
- Sponsky - Joel on Software: "Can Your Programming Language Do This?"
- (Motivation) <http://www.joelonsoftware.com/items/2006/08/01.html>
- (Scheme) "Quick" Tutorial on Racket Scheme - <http://docs.racket-lang.org/quick/>
- (Scheme) RG - Racket Guide - <http://docs.racket-lang.org/guide/index.html>
- (Scheme) HTDP2e Prologue - http://www.ccs.neu.edu/home/matthias/HtDP2e/part_prologue.html

16. Additional important information:

Any directives concerning class will be sent to your Wayland email account. It is imperative that you monitor that throughout the semester.

There are several things you need to do each week. You should do them in this order:

1. Make sure you have completed everything from the prior week, because the material is fundamentally cumulative.
2. Do the assigned reading for this week and watch any videos I have posted for the week. You may find you need to watch some of the videos more than once to really understand them--that's ok, there's a lot in them.
3. Start the lab for this week. Get as far as you can on it, so that when we have tutorial sessions you will be able to ask me about any hard part you run into, or on other weeks you can email me.
4. Write your quiz questions for the week and turn them in.
5. Be sure to get your lab or homework and quiz turned in before Saturday night.

Each week builds on the prior week, so you need to make sure you've finished the prior week. Read the chapter first and watch any videos. Write the quiz questions you're going to submit. Then work on the lab or homework for the week. All of these will help you do well on the quiz.

Other information:

Disability Statement: In compliance with the Americans with Disabilities Act of 1990 (ADA), it is the policy of Wayland Baptist University that no otherwise qualified person with a disability be excluded from participation in, be denied the benefits of, or be subject to discrimination under any educational program or activity in the university. The Coordinator of Counseling Services serves as the coordinator of students with a disability and should be contacted concerning accommodation requests at (806) 291- 3765. Documentation of a disability must accompany any request for accommodations.

Students shall have protection through orderly procedures against prejudices or capricious academic evaluation. A student who believes that he or she has not been held to realistic academic standards, just evaluation procedures, or appropriate grading, may appeal the final grade given in the course by using the student grade appeal process described in the Academic Catalog. Appeals may not be made for advanced placement examinations or course bypass examinations. Appeals are limited to the final course grade, which may be upheld, raised, or lowered at any stage of the appeal process. Any recommendation to lower a course grade must be submitted through the Executive Vice President/Provost to the Faculty Assembly Grade Appeals Committee for review and approval. The Faculty Assembly Grade Appeals Committee may instruct that the course grade be upheld, raised, or lowered to a more proper evaluation.